

# **SPECIAL SECTIONS**

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# 1986 ADULT USE OF TOBACCO SURVEY

## Introduction

Since 1964, periodic Adult Use of Tobacco Surveys have been conducted to determine usage rates as well as descriptive information on smoking patterns of representative samples of the United States population. Information gathered included history of individual use of any tobacco product as well as attitudes on smoking-related issues. Previous Adult Use of Tobacco Surveys were conducted in 1964, 1966, 1970, and 1975. The most recent survey was conducted in 1986.

Since the earlier surveys, Federal and private agencies have exerted considerable effort to educate smokers. This effort has included a number of Surgeon General's reports dealing with the health consequences of smoking. Since the landmark reports of 1964 and 1979, which were comprehensive reports on smoking-related diseases, specific reports have been prepared on the evidence linking smoking to cancer, cardiovascular disease, and chronic obstructive lung disease. The 1986 Adult Use of Tobacco Survey was an opportunity to assess the impact of these reports and the public reaction to them by measuring attitudes towards smoking and the smoking behavior of the population.

In recent years, there have been major advances in protecting the rights of the nonsmoker in work settings and in public places. Many of these changes followed the publication of the Surgeon General's 1986 report on involuntary smoking. More recently, the Surgeon General's 1988 report on nicotine addiction received broad media coverage and should further alter how people perceive the use of tobacco. Public reaction to these reports in the form of the enactment of nonsmoking legislation, for example, can be measured by the series of Adult Use of Tobacco Surveys. The 1986 survey offers a good baseline for comparison since information was collected prior to the release of the last two Surgeon General's reports. Further, the impact of the reports can be measured in part by comparing the data from the 1986 survey with data from the surveys conducted in 1964, 1966, and 1975.

Trend data on smoking prevalence are also available from the National Health Interview Survey (NHIS), an in-person survey conducted by the National Center for Health Statistics every 2 to 3 years during the past quarter century. These data were presented in detail in the 1989 Surgeon General's report, *Reducing the Health Consequences of Smoking: 25 Years of Progress*. It should be noted that the prevalence estimates derived from telephone surveys, including the 1970, 1975, and 1986 Adult Use of Tobacco Surveys, are generally two or three percentage points below those derived from in-person surveys, for reasons explained in the 1989 Surgeon General's report. The NHIS data are considered to be the data of highest quality (large sample size, high response rate), although the Adult Use of Tobacco Surveys offer much more comprehensive information related to tobacco use.

## Survey Description

In 1986, a telephone survey of smoking history, attitudes and beliefs was conducted. In this survey, 13,031 members of the civilian, non-institutionalized population of the United States were contacted. A two-stage sampling procedure was used within a computer-assisted telephone interview format. The first stage involved selecting a random sample of telephone exchanges within the United States. The sampling procedure was balanced for the number of telephones within the exchange. Clusters of between 10 and 15 households within each exchange were contacted using random digit dialing; up to 27 callbacks were made. Households were enumerated and smoking status of members ascertained. A total of 36,405 households were contacted for a response rate of 85.5 percent.

In the second stage, a further stratified random sampling procedure was undertaken to provide an approximately equal proportion of respondents in each smoking category (current, former, never). The stratification variable was the number of smokers in the household. Up to 10 callbacks were made to interview the selected respondents for a response rate of 86.9 percent. The overall response rate from the two procedures was 74.3 percent, representing the product of the response rate of each.

Quality control procedures in the survey involved 26 hours of survey-specific training and practice for interviewers and silent monitoring of ten percent of all interviews by supervisory staff.

Data obtained were weighted to reflect the United States population in two stages. First, a base weight was calculated that was the product of weighting for cluster (completed screeners within cluster), household (telephone numbers within household) and person (to account for selection based on smoking status). Second, post-stratification weighting was done for region, education, race, sex, and age.

## Cigarette Smoking Status and Quit Ratios

Table 1 presents the data on cigarette smoking status from the 1986 Adult Use of Tobacco Survey. All percentages in this table are weighted to the total population as indicated above. To obtain population numbers for any subgroup from this table, the population estimate for the subgroup is multiplied by the proportion of the group that smokes. The quit ratio (Pierce et al., 1986) is the statistic which indicates the proportion of ever smokers who have become former smokers. It is derived by dividing the number of former smokers in the population by the number who have ever smoked at least one hundred cigarettes in their lives.

According to this survey, 26.5 percent of Americans of 17 years of age and older smoke cigarettes. Those who have never had a cigarette constitute 48.9 percent and those who

have been smokers but have quit constitute 24.6 percent. Of those who have ever smoked, 48.1 percent are now former smokers (quit ratio).

Among the male adult population, 29.5 percent are current smokers, 40.0 percent are never smokers and 30.4 percent are former smokers; the quit ratio is 50.8 percent. Among the female adult population, 23.8 percent are current smokers, 56.9 percent never smoked and 19.3 percent are former smokers; the quit ratio is 44.8 percent.

There is an increase from 18.9 percent to 32.8 percent in smoking prevalence with increases in age from the 17 to 19 age group up to the 35 to 44 year olds. Prevalence declines to 13.9 percent for those 65 years of age and older. The quit ratio increases directly with age, from 22.3 percent for the 17 to 19 year olds to 70.4 percent for the 65 years of age and older group.

The proportion of the white population currently smoking is 26.4 percent; the proportion of the black population currently smoking is 28.4 percent. Among whites who have ever smoked, 49.3 percent have stopped and among blacks who have ever smoked, 38.8 percent have stopped.

The Western region has the lowest smoking prevalence, 24.5 percent, and the highest quit ratio, 51.7 percent. The Southeast region has the highest smoking prevalence, 28.2 percent, and shares the lowest quit ratio, 45.9 percent, with the Midwest.

Among the different marital status groups, the divorced or separated group has the highest smoking prevalence, 38.2 percent. The widowed group, however, has the highest quit ratio, 58.9 percent.

Smoking prevalence declines with increasing number of years of education. For those with 11 or fewer years of education, the prevalence is 31.4 percent; the proportion of smokers among those who have 16 years or more of education is 16.3 percent. The quit ratio increases from 44.1 percent for the less educated group to 63.5 percent for the more educated group.

The same pattern is observed for income. Smoking prevalence falls from 28.9 percent for those with a household income of \$10,000 or less, to 21.8 percent for those with a household income of more than \$40,000. The quit ratio increases with each income category, from 41.5 percent to 58.8 percent. The smoking prevalence is 30.0 percent for those who fall below the poverty level and 27.3 percent for those who are above the poverty level; the quit ratio is 39.1 percent and 48.5 percent, respectively.

## Total Tobacco Use Status

Cigarettes are the major type, but not the only type of tobacco, used by the population. People also smoke cigars and pipes and use chewing tobacco and snuff. Accordingly, it is important to review total tobacco use in the population.

Table 2 presents the data on tobacco use, including quit ratios, by sociodemographic variables. Among the adult male

population, 37.9 percent are current users of some form of tobacco, 35.1 percent are former users, and 27.0 percent have never been users; the quit ratio is 48.1 percent. Among the adult female population, 24.4 percent are current users of some form of tobacco, 20.9 percent are former users, and 54.7 percent have never been users; the quit ratio is 46.1 percent. A comparison of Table 1 and Table 2 shows that the use of tobacco other than cigarettes is predominantly a male phenomenon.

There is a continual increase in prevalence of tobacco use as age increases, from 22.2 percent in the 17 to 19 years of age group, to 36.4 percent in the 35 to 44 years of age group. The prevalence decreases significantly to 19.5 percent for those 65 years of age and older. The quit ratio increases with age, from 35.3 percent for those 17 to 19 years old to 63.9 percent for those 65 years of age and older.

The survey shows that the prevalence of tobacco use decreases with increasing years of education. It ranges from 37.1 percent for those with 11 or fewer years of education, to 21.3 percent for those who have completed college and have 16 years or more of education. The quit ratio increases from 41.3 percent for those with some high school education to 61.4 percent for those with a college degree.

Among the marital status groups, those in the divorced or separated category have the highest overall tobacco use at 41.6 percent. The widowed category has the highest quit ratio of 54.1 percent.

In the household income category, those with an annual income of between \$20,000 and \$29,999 have the highest tobacco use prevalence at 35.4 percent. Those with an annual income of \$40,000 or more have the highest quit ratio at 57.2 percent.

## Tobacco Use: Cigar/Pipe and Smokeless Status

As shown in Table 3, currently 4.3 percent of the United States adult population smoke cigars or pipes and 2.7 percent use smokeless tobacco. As indicated earlier, use of these types of tobacco occurs mainly in males, 8.7 percent of whom smoke cigars or pipes and 5.2 percent of whom use smokeless tobacco. Usage of cigars and pipes increases with age, up to 6.7 percent in the 45 to 54 years of age group and starts declining thereafter. Female usage is less than one percent.

The opposite phenomenon is observed among the current users of smokeless tobacco. Smokeless tobacco use declines with age, up to the 45 to 54 year olds. Almost the same proportion of whites and blacks, 2.8 percent and 2.3 percent, respectively, use smokeless tobacco. Currently, 4.4 percent of whites and 3.7 percent of blacks are smoking cigars or pipes.

There is no marked variation among regions for cigar and pipe use. The Southeast, however, has a higher prevalence of

smokeless tobacco use, 4.2 percent, followed by the West with 2.3 percent.

The populations with 11 or fewer years of education and with 16 or more years of education have the highest prevalence of cigar and pipe smoking, 4.9 percent and 5.3 percent, respectively. The use of smokeless tobacco, however, declines from 4.5 percent to 1.6 percent as education increases.

There is a pattern of increasing prevalence of cigar and pipe use from 3.1 percent to 5.5 percent as household income increases. The opposite is true for the use of smokeless tobacco: 4.1 percent for those with household incomes of less than \$10,000; 2.1 percent for those with household incomes of \$40,000 or more. Of those above the poverty level, 4.7 percent smoke cigars or pipes and of those below the poverty level, 3.0 percent smoke cigars or pipes. For smokeless tobacco, the figures are reversed: 2.5 percent for those above the poverty level and 4.3 percent for those below the poverty level.

## **Tobacco Use: Status of Different Combinations**

Table 4 shows the different combinations of tobacco use. The proportion of the United States adult population that currently smokes cigarettes, but does not use other forms of tobacco, is 24.3 percent, while another 2.3 percent also use other forms of tobacco. Former cigarette smokers who do not use any other form of tobacco represent 22.6 percent. Another 1.9 percent of the United States population are former cigarette smokers who currently use either smokeless tobacco (0.9 percent) or cigars or pipes (1.0 percent). The proportion of the population that has never smoked cigarettes nor used any other tobacco is 46.5 percent. Another 1.1 percent, although they have never smoked cigarettes, currently use smokeless tobacco and 1.3 percent smoke cigars or pipes.

## **Changes in Smoking and Tobacco Use**

Since 1975 Tables 5 and 6 present the cigarette smoking and tobacco use data from the 1975 Adult Use of Tobacco Survey. Comparison of the data from the 1975 survey with data from the 1986 survey shows that more adult males smoked in 1975, 40.5 percent, than in 1986, 29.5 percent. Smoking prevalence for adult females was also higher in 1975 at 31.4 percent compared to 23.8 percent in 1986.

Smoking prevalence increased with age, peaking in the 35 to 44 years of age group, after which it decreased. In 1975, smoking prevalence increased from 38.2 percent in 21 to 24 year olds to 43.6 percent in 35 to 44 year olds, then decreased to 17.4 percent for those 65 years of age and older. A similar pattern existed in the 1986 data; however, the whole curve was lower. In 1986, smoking prevalence increased from 18.9 percent in the 17 to 19 year olds (a younger age group than surveyed in 1975), peaked at 32.8 percent in the 35 to 44 years

of age group, then decreased to 13.9 percent for those 65 years of age and older.

The quit ratio increases continually according to both the 1975 and the 1986 surveys, although it is at a higher overall level in 1986. In 1975, the quit ratio increased from 28.1 percent in the youngest age group to 57.9 percent in the oldest age group. The pattern is similar in 1986. The quit ratio increased from 22.3 percent in the youngest age group to 70.4 percent in the oldest age group.

Within the education category, smoking prevalence in 1986 decreased as education level increased. Those with 11 or fewer years of education had a smoking prevalence of 31.4 percent while those with 16 or more years of education had a smoking prevalence of 16.3 percent. In 1975, however, the smoking prevalence increased from 35.2 percent for those with some high school education to 40.2 percent for those with a high school education and decreased for those with a college education. Overall, smoking prevalence has decreased considerably from 1975 to 1986 for those with 16 or more years of education from 27.6 percent in 1975 to 16.3 percent in 1986.

The quit ratio by education is totally different for each year surveyed. In 1986, it continued to increase from 44.1 percent for those with 11 or fewer years of education to 63.5 percent for those with 16 or more years. In 1975, however, the quit ratio was 38.6 percent for those with less than 12 years of education. It then increased for those with some college, 41.1 percent, to a high of 51.2 percent for those with a college degree.

## **Describing Smoking Patterns**

The health consequences of smoking are related to the degree of exposure that a person has to tobacco smoke (Surgeon General's reports 1964-1986). The most commonly used index of exposure is the number of cigarettes smoked per day. However, the accuracy of this index as a measure of exposure has been questioned. Biochemical studies have found that the correlation between the number of cigarettes smoked per day and the biochemical markers of use, cotinine, thiocyanate, and carbon monoxide, is not high.

A related index of exposure is the "strength" of the cigarette smoked. Three categories of this exposure variable, selected to give approximately equal distributions of the population, are reported in Table 7. The Federal Trade Commission has established a standard procedure for measuring the relative strengths of different cigarettes by assessing the amount of tar and nicotine that each delivers when smoked by a machine in a standard manner. The level of tar and the level of nicotine delivered by different cigarettes according to the standard measurement method are highly correlated and it is sufficient to report only one. Three categories of cigarette tar level, also selected to provide reasonably equal distributions, are reported in this Table. The Table also provides information on the percentage of each group that smokes menthol cigarettes. Menthol, which has some local anesthetic properties, may enable a smoker to have a stronger inhalation technique and,

therefore, to obtain a larger dose of tobacco smoke constituents per cigarette.

The proportion of current smokers who smoke 15 or fewer cigarettes per day ("light" smokers) is 35 percent. An equal proportion, 34.9 percent, smoke 16 to 24 cigarettes per day and 30.1 percent smoke 25 or more cigarettes per day ("heavy smokers"). The proportion of those smoking 15 or fewer cigarettes among male current smokers is 29.8 percent and among females it is 40.7 percent. There are 36.2 percent male and 23.4 percent female current smokers who are heavy smokers, smoking 25 or more cigarettes per day. Among 17 to 19 year olds, more smokers, 53.8 percent, tend to smoke 15 cigarettes or fewer per day. This proportion of light smokers decreases with increasing age up to the 55 to 64 years of age group at 29.8 percent. In the oldest age category, those 65 years of age and older, the proportion of light smokers was 42.1 percent. However, this change may be a result of differential mortality in heavier smokers rather than a change in cigarette smoking pattern. The proportion of heavy smokers increases with age, from 12.1 percent of the 17 to 19 year olds, to 38.5 percent of the 45 to 54 year olds. Then it falls to 21.3 percent for those 65 years of age and older.

Among white smokers 31.2 percent are light smokers and 33.1 percent are heavy smokers. Among blacks, however, the majority, 61.3 percent, are light smokers and 11.4 percent are heavy smokers.

The region with the highest proportion of light smokers, 39.1 percent, and the lowest proportion of heavy smokers, 28.8 percent, is the Western region. The Midwest has the lowest proportion of light smokers, 31.7 percent, and the highest proportion of heavy smokers, 33.3 percent.

The difference in the number of cigarettes smoked per day by education level is only minor. Of those with 16 years or more of education, 39.1 percent smoked 15 or fewer cigarettes per day and of those with 11 or fewer years of education, 33.5 percent smoked 15 or fewer cigarettes per day. Only 28.1 percent of the more educated and 30.0 percent of the less educated smoked 25 or more cigarettes per day.

The majority of smokers, 58.8 percent, smoke cigarettes with a tar level of more than 15 mg/per cigarette. This is true for both males, 65.2 percent, and females, 51.7 percent, and for each age group. Among white smokers, 31.8 percent smoke "low-tar" cigarettes, with a tar level of less than or equal to 10 mg/per cigarette, and 55.9 percent smoke "high-tar" cigarettes with more than 15 mg/per cigarette. However, among black smokers, 14.5 percent smoke low-tar cigarettes, and the majority, 78.0 percent, smoke cigarettes with a high-tar yield. The Midwest region has the highest proportion of smokers of high-tar cigarettes, 64.3 percent, and the Northeast has the lowest proportion, 50.6 percent. High-tar cigarettes are smoked by 50.4 percent of the more educated smokers and 64.8 percent of the less educated smokers.

Overall, 29.2 percent of current smokers, 24.9 percent of males and 34.0 percent of females, use menthol cigarettes. Noticeably, 75.5 percent of black smokers use menthol cigarettes, compared to 23.1 percent of whites. The Southeast region has the highest proportion, 31.2 percent, of menthol

cigarette users while the West has the lowest proportion, 24.5 percent. Of smokers who fall below the poverty level, 38.6 percent smoke menthol cigarettes, a higher percentage than the 27.7 percent above the poverty level who smoke menthol cigarettes. In general, the proportion that smokes menthol cigarettes in any particular subpopulation will reflect the distribution of blacks in that population.

## The Smoking Patterns of Former Smokers

Smoking patterns, i.e., the amount and type of tobacco use of former smokers, are only important if they are different from those of current smokers. If, for example, heavy smokers predominated among current smokers and light smokers predominated among former smokers, there would be concern that there might be a large group of "hard-core" smokers resistant to change. Therefore, the smoking prevalence might start to level off.

Table 8 presents data for those who have quit in the last 5 years. In this group of former smokers, 38.2 percent smoked 15 or fewer cigarettes per day, 29.6 percent smoked 16 to 24 cigarettes per day, and 32.2 percent smoked 25 or more cigarettes per day. Among these former smokers, 31.2 percent of males and 46.6 percent of females were light smokers, but 39.2 percent of males and 23.7 percent of females were heavy smokers. The proportion that used to be heavy smokers increased in each age group to 30.8 percent of 25 to 44 year olds and 45.1 percent of the 45 to 64 year olds, but it was lower, 27.8 percent, among those 65 years of age and older. Among white smokers, 36.1 percent used to be light smokers and 34.2 percent used to be heavy smokers. Among black smokers, these proportions were 57.0 percent and 12.1 percent, respectively.

Among former smokers, 42.1 percent of those with 16 or more years of education used to smoke 15 or fewer cigarettes as opposed to 36.0 percent of those with 11 or fewer years of education. Of the more educated former smokers, 25.5 percent used to be heavy smokers, and 35.2 percent of the less educated former smokers were heavy smokers. Overall, 57.6 percent of former smokers used to smoke high-tar cigarettes, 60.5 percent of males and 54.1 percent of females. For all groups, the proportion of former smokers who used to smoke high-tar cigarettes is higher than the proportion who used to smoke cigarettes with lower tar content. Low-tar cigarettes, less than or equal to 10 mg, were used by 33.4 percent of white former smokers and 15.5 percent of black former smokers. Also, 55.3 percent of white former smokers used to smoke high-tar cigarettes compared to 77.2 percent of black former smokers.

Menthol cigarettes were used by 30.3 percent of former smokers, 23.6 percent of males and 38.3 percent of females. Again, menthol usage is mainly a black phenomenon with 72.4 percent of black former smokers who used to smoke menthol cigarettes compared to 25.9 percent of white former smokers.

The overall conclusion is that there are not substantial differences between former smokers and current smokers in their pattern of smoking. This lack of difference suggests that

the patterns of smoking examined here (daily cigarette consumption, tar yield, mentholation) might not be associated with smokers' ability to quit.

## Attempts to Quit Smoking Among Current Smokers

Knowledge of changes in current smoking status is not exclusive in predicting what is likely to happen over the next several years with respect to smoking prevalence. Also relevant is the proportion of smokers who have made quit attempts. Table 9 presents these data for different subgroups of the population.

More than one-third, 35.5 percent, of current smokers have never tried to quit; 36.7 percent of male and 34.2 percent of female smokers. Another 37.3 percent of all smokers made one to two attempts, 18.9 percent made three to five attempts, and 8.3 percent attempted to quit six or more times. By age, 47.2 percent of the youngest age group, 17 to 19 year olds, have never tried to stop, 32.2 percent of the 35 to 44 year age group and 37.0 percent of the 65 years of age and older group have never tried to stop. The proportion of those who did not try to quit is similar for whites and blacks, 35.6 percent and 34.3 percent, respectively. Of those who have not completed high school, 37.1 percent have never made an attempt to quit, while of those with a college degree or more, 32.5 percent have not tried to quit.

As shown in Table 10, among current smokers in 1975, 37.6 percent had never attempted to quit; 35.4 percent of males and 40.4 percent of females. Another 37 percent of all smokers made one to two attempts, 18.1 percent made three to five attempts, and 7.3 percent made six or more attempts to quit. In the 21 to 24 years of age group in 1975, 37.8 percent had never attempted to quit, a contrast to 42.5 percent of the 20 to 24 years of age group in 1986. Among the older groups, however, more people made no attempt to quit in 1975, 40.4 percent for the 55 to 64 years of age group and 44.9 percent for the 65 years of age and older group. In 1986, those figures had dropped to 35.8 percent and 37.0 percent, respectively. In 1975, among those who had not completed high school, 36.4 percent had never tried to stop, while among those with a college degree or more, 33.3 percent had made no attempt to quit.

In the different marital status categories, the widowed had the highest proportion of those who had never tried to quit, 48.7 percent. This proportion does not vary substantially for the different income groups, from 38.1 percent among those earning less than \$10,000 to 36.1 percent among those with an income of \$20,000 or more.

Comparing the 1975 data to the 1986 data on the number of attempts to quit, there are very few differences of any magnitude among any subgroups of the population. There are two possible interpretations of this lack of change. Either the process of changing smoking patterns is consistent over time or the way in which quit attempts are recalled does not truly

reflect quitting behavior. Given the consistent pattern of decrease in smoking prevalence over time, the first interpretation seems likely.

## Quit Attempts of Former Smokers

The number of former smokers who succeed on either the first or the second quit attempt is a measure of the success rate of quit attempts in the community. These data are presented for 1986 in Table 11.

The majority of former smokers, 70.2 percent, have made one to two attempts before quitting, 21.2 percent tried three to five times, and 8.6 percent tried six or more times. The same pattern holds true for male former smokers, 68.9 percent of whom tried one to two times, and female former smokers, 72.2 percent of whom made one to two attempts. White former smokers who made one to two attempts were 70.3 percent, and black former smokers, 68.6 percent.

Table 12 shows that in 1975, the majority of former smokers, 59.0 percent, made one to two attempts before quitting, 24.8 percent tried three to five times and 16.2 percent tried six or more times. The same pattern holds for males, 56.9 percent of whom tried one to two times, and females, 62.9 percent of whom tried one to two times.

The major difference between 1975 and 1986 is that a greater proportion of former smokers indicated that they were successful on their first or second attempt to quit in 1986 (70.2 percent) than in 1975 (59.0 percent).

## Age of Initiation of Smoking

Age of initiation of smoking is another important variable predicting what will happen to smoking prevalence. Initiation of smoking by adolescents is influenced by social mores. Table 13 shows that almost half of current smokers, 46.7 percent, started when they were younger than 18 years of age. By the age of 20, 78.3 percent had initiated smoking. Among males currently smoking, 51.7 percent started before 18 years of age and 83.9 percent started before their 21st birthday. Among female current smokers, however, these figures are 41.0 percent and 72.0 percent, respectively, indicating that females have traditionally started smoking at older ages. Among the 25 to 44 years of age group, 20.2 percent started smoking regularly after the age of 20 years, among the 45 to 64 years of age group, 29.2 percent had done so, and among those 65 years of age and older, the proportion is 44.3 percent. Thus, the age of initiation of smoking has remained an adolescent phenomenon and has decreased over time.

Among white smokers, 49.1 percent started before 18 years of age, 79.9 percent before 21 years of age. However, among blacks, 31.0 percent had started before they reached the age of 18 years and 68.2 percent before the age of 21 years. Thus, black smokers tend to start smoking at older ages than white smokers.

People with 16 years or more of education tend to start later in life compared to those with less education; 28.1 percent had started before the age of 18 years, 69.1 percent before the age of 21 years and 30.9 percent after the age of 20 years. For those with 11 or fewer years of education, these proportions are 59.3 percent, 83.3 percent and 16.7 percent, respectively.

Age of initiation among former smokers is important if it is different from that of current smokers. Age of initiation might predict the strength of addiction and the difficulty in quitting. Again, this might indicate that current smokers may have more difficulty quitting than former smokers.

Table 14 shows that among former smokers, 41.3 percent started smoking before 18 years of age and 76.1 percent before 21 years of age. Among male former smokers, 46.0 percent initiated smoking before 18 years of age and 81.2 percent had done so before 21 years of age. However, the respective figures for female former smokers are 34.6 percent and 68.8 percent. Only 18.8 percent of male former smokers started smoking regularly after the age of 20 years, while 31.2 percent of the female former smokers did so. The proportion of former smokers that started after they were 20 years of age differs within the different age groups; 16.1 percent of the 25 to 44 years of age group, 26.1 percent of the 45 to 64 years of age group and 41.2 percent of those 65 years of age and older. In summary, slightly higher proportions of current

smokers began to smoke before the age of 18 years compared to former smokers. This pattern is in accord with the hypothesis that the lower the age of initiation, the greater is the difficulty of quitting.

Among former white smokers, 42.0 percent started before the age of 18 years and 76.9 percent before the age of 21 years. Among black former smokers, however, 34.9 percent started smoking regularly before 18 years of age and 68.7 percent had started before 21 years of age. Among those with 11 or fewer years of education, 26.7 percent started smoking after the age of 20 years. The proportion for those who have 16 years or more of education is 24.0 percent.

## Further Information

This summary of the 1986 Adult Use of Tobacco Survey provides only some of the basic information relating to smoking behavior. More detailed information on the survey, including detailed analyses of smoking behavior in subgroups defined by more than one variable, and an outline of how people in the major sociodemographic categories responded to each question, will be available from the Office on Smoking and Health before the end of 1988. Further, a fully documented public access computer tape will also be available before the end of 1988.

**Table 1**  
**Cigarette Smoking Status and Quit Ratios by**  
**Socio Demographic Variables**  
**1986**

	Smoking status (%)			Quit ratio**	Est. pop. (mil.)	Sample size
	Current	Former	Never			
Total (Age 17+ years)	26.5	24.6	48.9	0.481	176.5	13,031
SEX						
Male	29.5	30.4	40.0	0.508	83.9	6,377
Female	23.8	19.3	56.9	0.448	92.6	6,654
AGE (1st grouping)						
17-19	18.9	5.4	75.7	0.223 *	10.7	560
20-24	25.0	10.2	64.7	0.290	20.0	1,086
25-34	31.4	19.8	48.8	0.387	41.2	3,010
35-44	32.8	26.0	41.2	0.442	32.2	2,792
45-54	29.3	31.6	39.1	0.519	22.6	1,825
55-64	26.0	36.0	38.0	0.580	22.3	1,791
65+	13.9	33.2	52.8	0.704	27.4	1,967
AGE (2nd grouping)						
17	15.9	3.6	80.5	0.186	4.4	193
18-24	24.1	9.4	66.6	0.280	26.4	1,453
25-44	32.0	22.5	45.4	0.413	73.4	5,802
45-64	27.7	33.8	38.5	0.550	44.9	3,616
65+	13.9	33.2	52.8	0.704	27.4	1,967
RACE						
White	26.4	25.7	48.0	0.493	151.4	11,563
Black	28.4	18.0	53.6	0.388	19.4	1,096
Other	24.5	19.1	56.4	0.439	5.7	372
REGION						
Midwest	26.6	22.6	50.8	0.459	43.7	3,236
Northeast	25.5	26.8	47.7	0.513	37.1	2,968
Southeast	28.2	23.9	47.9	0.459	61.9	4,301
West	24.5	26.2	49.3	0.517	33.8	2,526
MARITAL STATUS						
Married/Cohabiting	26.9	28.5	44.6	0.515	113.8	8,364
Widowed	18.0	25.8	56.3	0.589	12.4	1,011
Divorced/Separated	38.2	23.9	37.9	0.384	14.9	1,446
Never Married	23.4	11.8	64.8	0.335	35.1	2,179
Unknown	33.5	37.1	29.4	0.526	0.4	31
EDUCATION						
11 or Fewer Years	31.4	24.8	43.8	0.441	46.3	2,431
12 Years	28.9	24.0	47.2	0.454	66.9	4,872
13-15 Years	24.4	22.2	53.4	0.476	32.8	3,118
16+ Years	16.3	28.4	55.2	0.635	30.5	2,610
HOUSEHOLD INCOME						
\$10,000 or Less	28.9	20.5	50.6	0.415	17.9	1,220
\$10,000-\$19,999	28.7	23.0	48.3	0.445	31.4	2,204
\$20,000-\$29,999	31.4	22.8	45.8	0.420	37.7	2,853
\$30,000-\$39,999	28.0	24.9	47.1	0.470	22.5	1,735
\$40,000+	21.8	31.2	47.0	0.588	36.0	2,947
Unknown	21.4	23.1	55.5	0.519	31.1	2,072
EMPLOYMENT						
Administrator/Manager	22.6	33.0	44.4	0.593	16.0	1,438
Professional/Technical	17.1	26.3	56.6	0.605	27.5	2,240
Sales/Clerical	25.7	23.4	50.9	0.476	43.3	3,290
Craftsman	34.8	32.6	32.6	0.483	22.7	1,725
Operative	32.6	24.0	43.3	0.424	18.8	1,286
Laborer/Service	30.2	20.8	49.0	0.408	28.7	1,873
Never in Labor Force	20.9	9.2	69.9	0.307	11.9	597
Occupation Not Reported	28.4	24.4	47.2	0.463	7.5	582
POVERTY LEVEL***						
Above	27.3	25.7	47.0	0.485	128.4	9,913
Below	30.0	19.3	50.7	0.391	17.0	1,046
Unknown	21.4	23.1	55.5	0.519	31.1	2,072

\* Smoking status totals to 100%.

\*\* The Quit ratio is the number of former smokers divided by the number of people who have ever smoked.

\*\*\* Poverty Level is based on the definition provided by the U.S. Bureau of the Census. See text for exact procedures.

**Table 2**  
**Tobacco Use: Status and Quit Ratios by**  
**Socio Demographic Variables**  
**1986**

	Tobacco use status (%)			Quit ratio**	Est. pop. (mil.)	Sample size
	Current	Former	Never			
Total (Age 17+ years)	30.8	27.7	41.5	0.473	176.5	13,031
<b>SEX</b>						
Male	37.9	35.1	27.0	0.481	83.9	6,377
Female	24.4	20.9	54.7	0.461	92.6	6,654
<b>AGE (1st grouping)</b>						
17-19	22.2	12.1	65.7	0.353	10.7	560
20-24	28.1	16.8	55.2	0.374	20.0	1,086
25-34	34.8	24.0	41.2	0.408	41.2	3,010
35-44	36.4	29.1	34.5	0.445	32.2	2,792
45-54	35.1	32.1	32.8	0.477	22.6	1,825
55-64	31.8	36.9	31.3	0.537	22.3	1,791
65+	19.5	34.4	46.2	0.639	27.4	1,967
<b>AGE (2nd grouping)</b>						
17	19.1	10.8	70.2	0.360	4.4	193
18-24	27.2	15.9	57.0	0.369	26.4	1,453
25-44	35.5	26.2	38.3	0.425	73.4	5,802
45-64	33.5	34.5	32.0	0.507	44.9	3,616
65+	19.5	34.4	46.2	0.639	27.4	1,967
<b>RACE</b>						
White	30.8	28.6	40.5	0.482	151.4	11,563
Black	32.3	21.5	46.2	0.399	19.4	1,096
Other	26.2	22.8	50.9	0.465	5.7	372
<b>REGION</b>						
Midwest	30.6	26.3	43.1	0.462	43.7	3,236
Northeast	29.6	28.7	41.7	0.492	37.1	2,968
Southeast	33.2	26.9	39.9	0.448	61.9	4,301
West	28.2	29.7	42.1	0.513	33.8	2,526
<b>MARITAL STATUS</b>						
Married/Cohabiting	31.5	30.9	37.6	0.496	113.8	8,364
Widowed	22.1	26.1	51.8	0.541	12.4	1,011
Divorced/Separated	41.6	26.9	31.5	0.393	14.9	1,446
Never Married	27.2	17.9	54.9	0.397	35.1	2,179
Unknown	38.0	32.6	29.4	0.461	0.4	31
<b>EDUCATION</b>						
11 or Fewer Years	37.1	26.1	36.7	0.413	46.3	2,431
12 Years	32.3	26.2	41.5	0.448	66.9	4,872
13-15 Years	27.8	26.9	45.3	0.492	32.8	3,118
16+ Years	21.3	33.9	44.8	0.614	30.5	2,610
<b>HOUSEHOLD INCOME</b>						
\$10,000 or Less	33.3	23.6	43.2	0.415	17.9	1,220
\$10,000-\$19,999	32.9	24.8	42.2	0.430	31.4	2,204
\$20,000-\$29,999	35.4	25.9	38.7	0.423	37.7	2,853
\$30,000-\$39,999	32.0	27.9	40.1	0.466	22.5	1,735
\$40,000+	26.8	35.9	37.2	0.572	36.0	2,947
Unknown	25.6	25.2	49.2	0.497	31.1	2,072
<b>EMPLOYMENT</b>						
Administrator/Manager	28.0	37.6	34.4	0.574	16.0	1,438
Professional/Technical	20.7	30.7	48.6	0.597	27.5	2,240
Sales/Clerical	27.4	25.4	47.1	0.481	43.3	3,290
Craftsman	42.9	33.9	23.2	0.441	22.7	1,725
Operative	39.4	26.8	33.8	0.404	18.8	1,286
Laborer/Service	34.3	23.2	42.5	0.404	28.7	1,873
Never in Labor Force	23.3	16.5	60.2	0.415	11.9	597
Occupation Not Reported	34.2	26.2	39.5	0.434	7.5	582
<b>POVERTY LEVEL***</b>						
Above	31.6	28.9	39.6	0.477	128.4	9,913
Below	34.8	23.1	42.2	0.399	17.0	1,046
Unknown	25.6	25.2	49.2	0.497	31.1	2,072

\* Tobacco use status totals to 100%.

\*\* The Quit ratio is the number of former smokers divided by the number of people who have ever smoked.

\*\*\* Poverty Level is based on the definition provided by the U.S. Bureau of the Census. See text for exact procedures.

Table 3

**Tobacco Use: Cigar/Pipe and Smokeless Tobacco Use Status by  
Socio Demographic Variables  
1986**

	Cigar/pipe smoking status (%)				Smokeless tobacco use status (%)				Est. pop. (mil.)	Sample size
	Current	Former	Never	Total	Current	Former	Never	Total		
Total (Age 17+ years)	4.3	22.2	73.5	100	2.7	3.9	93.4	100	176.5	13,031
<b>SEX</b>										
Male	8.7	41.8	49.6	100	5.2	7.4	87.4	100	83.9	6,377
Female	0.3	4.5	95.2	100	0.5	0.8	98.7	100	92.6	6,654
<b>AGE (1st grouping)</b>										
17-19	1.5	13.6	85.0	100	4.1	6.1	89.8	100	10.7	560
20-24	2.0	16.6	81.4	100	2.9	5.0	92.1	100	20.0	1,086
25-34	4.0	19.1	76.9	100	2.4	3.3	94.3	100	41.2	3,010
35-44	5.0	26.2	68.8	100	2.2	2.9	94.9	100	32.2	2,792
45-54	6.7	25.2	68.1	100	2.5	3.9	93.6	100	22.6	1,825
55-64	5.1	27.9	67.0	100	3.1	4.1	92.8	100	22.3	1,791
65+	3.9	22.6	73.5	100	3.0	4.2	92.8	100	27.4	1,967
<b>AGE (2nd grouping)</b>										
17	0.8	13.0	86.2	100	4.0	4.0	92.0	100	4.4	193
18-24	2.0	16.0	82.0	100	3.2	5.6	91.1	100	26.4	1,453
25-44	4.4	22.2	73.3	100	2.3	3.1	94.5	100	73.4	5,802
45-64	5.9	26.5	67.6	100	2.8	4.0	93.2	100	44.9	3,616
65+	3.9	22.6	73.5	100	3.0	4.2	92.8	100	27.4	1,967
<b>RACE</b>										
White	4.4	23.4	72.2	100	2.8	3.9	93.3	100	151.4	11,563
Black	3.7	13.9	82.4	100	2.3	3.9	93.7	100	19.4	1,096
Other	3.5	19.4	77.1	100	1.8	3.7	94.5	100	5.7	372
<b>REGION</b>										
Midwest	4.8	22.6	72.6	100	2.1	3.5	94.4	100	43.7	3,236
Northeast	4.6	19.6	75.7	100	1.4	2.0	96.5	100	37.1	2,968
Southeast	3.8	23.2	73.0	100	4.2	5.0	90.8	100	61.9	4,301
West	4.1	22.7	73.2	100	2.3	4.4	93.2	100	33.8	2,526
<b>MARITAL STATUS</b>										
Married/Cohabiting	4.8	25.3	69.9	100	2.7	4.0	93.3	100	113.8	8,364
Widowed	1.8	8.9	89.2	100	3.2	2.4	94.4	100	12.4	1,011
Divorced/Separated	5.6	20.1	74.3	100	2.2	4.3	93.5	100	14.9	1,446
Never Married	2.8	17.7	79.4	100	2.8	4.0	93.2	100	35.1	2,179
Unknown	2.4	27.5	60.1	100	1.4	1.4	87.2	100	0.4	31
<b>EDUCATION</b>										
11 or Fewer Years	4.9	22.8	72.3	100	4.5	5.8	89.7	100	46.3	2,431
12 Years	3.6	20.0	76.5	100	2.4	3.7	93.8	100	66.9	4,872
13-15 Years	3.9	22.5	73.6	100	1.9	3.7	94.5	100	32.8	3,118
16+ Years	5.3	26.0	68.7	100	1.6	1.7	96.7	100	30.5	2,610
<b>HOUSEHOLD INCOME</b>										
Less than \$10,000	3.1	16.8	80.1	100	4.1	5.4	90.5	100	17.9	1,220
\$10,000-\$19,999	4.0	21.2	74.9	100	3.0	4.7	92.3	100	31.4	2,204
\$20,000-\$29,999	4.3	23.1	72.6	100	2.6	4.1	93.3	100	37.7	2,853
\$30,000-\$39,999	5.0	24.2	70.8	100	2.6	4.0	93.4	100	22.5	1,735
\$40,000+	5.5	28.1	66.4	100	2.1	3.0	94.9	100	36.0	2,947
Unknown	3.3	17.1	79.6	100	2.7	3.0	94.3	100	31.1	2,072
<b>EMPLOYMENT</b>										
Administrator/Manager	6.0	30.0	63.9	100	1.6	2.2	96.2	100	16.0	1,438
Professional/Technical	3.5	21.3	75.2	100	1.1	1.8	97.1	100	27.5	2,240
Sales/Clerical	2.2	13.9	83.8	100	0.7	2.0	97.3	100	43.3	3,290
Craftsman	8.2	41.0	50.7	100	6.4	9.3	84.2	100	22.7	1,725
Operative	6.5	27.8	65.7	100	4.6	5.6	89.8	100	18.8	1,286
Laborer/Service	3.5	17.7	78.7	100	3.4	4.3	92.3	100	28.7	1,873
Never in Labor Force	1.6	10.1	88.3	100	2.5	4.0	93.5	100	11.9	597
Occupation Not Reported	4.4	22.2	73.4	100	4.8	4.1	91.1	100	7.5	582
<b>POVERTY LEVEL*</b>										
Above	4.7	23.9	71.4	100	2.5	3.8	93.7	100	128.4	9,913
Below	3.0	18.6	78.3	100	4.3	6.2	89.5	100	17.0	1,046
Unknown	3.3	17.1	79.6	100	2.7	3.0	94.3	100	31.1	2,072

\* Poverty level is based on the definition provided by the U.S. Bureau of the Census. See text for exact procedures.

**Table 4**  
**Tobacco Use: Status of Different Combinations by**  
**Socio Demographic Variables**  
**1986**

	Tobacco use status (%)							
	Current Cigarettes		Former Cigarettes			Never Cigarettes		
	No other tobacco	Plus other tobacco	No other tobacco	Only smokeless	Only cigars/pipe	No other tobacco	Only smokeless	Only cigars/pipe
Total (Age 17+ years)	24.3	2.3	22.6	0.9	1.0	46.5	1.1	1.3
<b>SEX</b>								
Male	24.9	4.6	26.4	1.9	2.2	35.8	1.8	2.5
Female	23.7	0.1	19.3	0.1	0.0	56.3	0.4	0.2
<b>AGE (1st grouping)</b>								
17-19	17.2	1.7	5.3	0.2	.	72.5	2.5	0.7
20-24	23.4	1.6	9.8	0.3	0.1	62.2	1.7	0.8
25-34	28.8	2.6	18.5	0.7	0.7	46.7	1.0	1.0
35-44	29.6	3.2	23.9	1.0	1.2	39.8	0.2	1.2
45-54	26.6	2.7	28.0	1.6	2.1	36.9	0.3	1.9
55-64	23.8	2.2	33.2	1.3	1.4	35.0	1.4	1.6
65+	12.8	1.1	30.6	1.3	1.3	49.9	1.4	1.5
<b>AGE (2nd grouping)</b>								
17	14.9	0.9	3.6	.	.	77.3	3.2	.
18-24	22.3	1.7	8.9	0.3	0.1	63.9	1.8	0.9
25-44	29.2	2.8	20.8	0.8	0.9	43.7	0.7	1.1
45-64	25.2	2.5	30.6	1.4	1.8	35.9	0.9	1.8
65+	12.8	1.1	30.6	1.3	1.3	49.9	1.4	1.5
<b>RACE</b>								
White	24.1	2.3	23.5	1.0	1.1	45.6	1.1	1.3
Black	26.4	1.9	16.9	0.7	0.5	50.8	1.5	1.4
Other	21.6	2.9	18.5	0.3	0.3	55.3	.	1.1
<b>REGION</b>								
Midwest	24.2	2.4	20.7	0.6	1.2	48.6	0.8	1.3
Northeast	23.8	1.7	24.8	0.4	1.6	45.6	0.7	1.5
Southeast	25.6	2.6	21.5	1.6	0.8	45.4	1.4	1.1
West	22.3	2.2	24.9	0.6	0.7	47.0	1.2	1.2
<b>MARITAL STATUS</b>								
Married/Cohabiting	24.4	2.5	26.1	1.2	1.2	42.5	0.8	1.4
Widowed	17.2	0.8	24.2	0.4	1.1	53.6	2.7	.
Divorced/Separated	34.6	3.6	22.2	0.4	1.3	36.2	0.6	1.1
Never Married	21.9	1.5	11.0	0.4	0.4	61.8	1.6	1.4
Unknown	25.7	7.8	32.6	.	4.6	29.4	.	.
<b>EDUCATION</b>								
11 or Fewer Years	28.3	3.1	22.2	1.6	1.0	40.6	1.9	1.3
12 Years	26.7	2.2	22.2	0.9	0.8	45.4	0.8	0.9
13-15 Years	22.4	2.0	20.8	0.5	0.9	51.4	0.8	1.2
16+ Years	14.8	1.5	26.1	0.5	1.8	52.6	0.7	1.9
<b>HOUSEHOLD INCOME</b>								
Less than \$10,000	26.3	2.5	19.0	1.0	0.5	47.7	2.3	0.6
\$10,000-\$19,999	26.4	2.3	20.6	1.6	0.9	46.5	0.8	1.0
\$20,000-\$29,999	29.0	2.4	21.0	1.0	0.8	43.6	0.9	1.3
\$30,000-\$39,999	25.1	3.0	22.5	1.0	1.4	45.5	0.5	1.1
\$40,000+	19.8	2.1	29.2	0.6	1.4	44.0	0.8	2.2
Unknown	19.8	1.6	21.3	0.6	1.1	53.1	1.5	1.0
<b>EMPLOYMENT</b>								
Administrator/Manager	20.7	1.9	30.9	0.6	1.5	41.2	0.8	2.4
Professional/Technical	16.3	0.8	24.6	0.4	1.3	54.7	0.4	1.5
Sales/Clerical	24.7	1.0	22.4	0.3	0.7	50.2	0.2	0.5
Craftsman	29.3	5.6	28.3	2.8	1.5	28.8	1.9	1.9
Operative	28.9	3.7	21.6	1.6	0.8	39.0	1.8	2.6
Laborer/Service	27.8	2.5	18.7	1.0	1.1	47.0	1.5	0.5
Never in Labor Force	19.7	1.2	8.7	0.3	0.3	68.0	1.5	0.3
Occupation Not Reported	25.5	2.9	22.3	0.6	1.5	43.5	2.4	1.4
<b>POVERTY LEVEL*</b>								
Above	24.9	2.4	23.6	1.0	1.1	44.8	0.8	1.4
Below	27.7	2.3	17.7	1.2	0.4	47.6	2.5	0.6
Unknown	19.8	1.6	21.3	0.6	1.1	53.1	1.5	1.0

\* Poverty level is based on the definition provided by the U.S. Bureau of the Census. See text for exact procedures.

**Table 5**  
**Cigarette Smoking Status and Quit Ratios by**  
**Socio Demographic Variables**  
**1975**

	Smoking status (%)				Quit ratio	Sample size
	Current	Former	Never	Total		
Total (Age 21+ years)	35.8	24.0	40.3	100	0.401	10,682
<b>SEX</b>						
Male	40.5	32.1	27.5	100	0.442	4,949
Female	31.4	16.4	52.2	100	0.343	5,733
<b>AGE (1st grouping)</b>						
21-24	38.2	14.9	46.9	100	0.281	1,144
25-34	41.5	21.8	36.7	100	0.345	2,757
35-44	43.6	23.4	33.0	100	0.349	2,050
45-54	38.5	27.6	33.9	100	0.418	1,891
55-64	31.8	29.8	38.4	100	0.483	1,434
65+	17.4	24.0	58.6	100	0.579	1,406
<b>AGE (2nd grouping)</b>						
21-24	38.2	14.9	46.9	100	0.281	1,144
25-44	42.4	22.5	35.1	100	0.347	4,807
45-64	35.5	28.6	35.9	100	0.446	3,325
65+	17.4	24.0	58.6	100	0.579	1,406
<b>MARITAL STATUS</b>						
Married	35.4	26.3	38.3	100	0.426	7,387
Widowed	24.0	15.8	60.2	100	0.397	1,075
Divorced/Separated	54.8	17.7	27.5	100	0.244	1,029
Never Married	36.5	16.9	46.7	100	0.316	1,170
Unknown	27.4	31.0	41.7	100	0.530	21
<b>EDUCATION</b>						
Some high school	35.2	22.1	42.7	100	0.386	2,828
High school graduate	40.2	22.1	37.6	100	0.355	3,742
Some college	36.3	25.3	38.3	100	0.411	2,173
College graduate	27.6	29.0	43.4	100	0.512	1,863
Unknown	25.1	24.3	50.6	100	0.492	76
<b>HOUSEHOLD INCOME</b>						
Less than \$10,000	34.8	19.3	45.9	100	0.356	3,685
\$10,000-\$19,999	38.2	26.4	35.3	100	0.409	3,919
\$20,000+	36.9	30.7	32.4	100	0.454	1,778
Unknown	29.6	19.5	50.9	100	0.398	1,300
<b>EMPLOYMENT</b>						
Professional/Technical	28.3	20.6	51.2	100	0.421	652
Administrator/Manager	32.6	19.2	48.2	100	0.370	696
Sales/Clerical	32.7	20.6	46.7	100	0.386	336
Craftsman	34.9	14.3	50.8	100	0.291	699
Operatives	36.0	14.9	49.1	100	0.293	380
Laborer/Service	36.4	15.6	48.0	100	0.300	257
Not in Labor Force	28.9	15.5	55.6	100	0.350	461
Occupation Not Reported	37.8	27.9	34.3	100	0.425	7,201

**Table 6**  
**Tobacco Use: Status and Quit Ratios by**  
**Socio Demographic Variables**  
**1975**

	<u>Tobacco use status (%)</u>				Quit ratio	Sample size
	Current	Former	Never	Total		
Total (Age 21+ years)	42.9	22.9	34.2	100	0.348	10,682
<b>SEX</b>						
Male	53.7	29.2	17.1	100	0.352	4,949
Female	32.8	17.1	50.1	100	0.343	5,733
<b>AGE (1st grouping)</b>						
21-24	42.1	16.9	41.1	100	0.286	1,144
25-34	46.9	21.4	31.7	100	0.313	2,757
35-44	49.1	22.3	28.6	100	0.312	2,050
45-54	46.9	25.0	28.1	100	0.348	1,891
55-64	40.2	26.9	33.0	100	0.401	1,434
65+	28.3	23.8	47.8	100	0.457	1,406
<b>AGE (2nd grouping)</b>						
21-24	42.1	16.9	41.1	100	0.286	1,144
25-44	47.9	21.8	30.4	100	0.313	4,807
45-64	43.9	25.8	30.3	100	0.370	3,325
65+	28.3	23.8	47.8	100	0.457	1,406
<b>MARITAL STATUS</b>						
Married	42.9	24.6	32.5	100	0.364	7,387
Widowed	31.0	16.1	52.9	100	0.341	1,075
Divorced/Separated	59.3	17.7	23.0	100	0.230	1,029
Never Married	42.0	19.1	39.0	100	0.312	1,170
Unknown	27.4	31.0	41.7	100	0.530	21
<b>EDUCATION</b>						
Some high school	43.8	20.9	35.3	100	0.323	2,828
High school graduate	46.0	20.5	33.5	100	0.308	3,742
Some college	41.9	25.9	32.2	100	0.382	2,173
College graduate	36.6	27.8	35.6	100	0.432	1,863
Unknown	37.7	20.4	42.0	100	0.351	76
<b>HOUSEHOLD INCOME</b>						
Less than \$10,000	41.6	18.9	39.5	100	0.312	3,685
\$10,000-\$19,999	45.3	25.0	29.6	100	0.355	3,919
\$20,000+	45.8	27.9	26.3	100	0.379	1,778
Unknown	35.1	20.3	44.6	100	0.366	1,300
<b>EMPLOYMENT</b>						
Professional/Technical	30.0	22.0	48.0	100	0.423	652
Administrator/Manager	34.0	19.8	46.1	100	0.368	696
Sales/Clerical	33.5	20.7	45.8	100	0.382	336
Craftsman	35.7	15.2	49.1	100	0.299	699
Operatives	38.9	17.1	44.0	100	0.306	380
Laborer/Service	37.0	16.4	46.6	100	0.307	257
Not in Labor Force	30.8	16.3	52.9	100	0.347	461
Occupation Not Reported	48.2	25.7	26.1	100	0.347	7,201

Table 7

**Cigarette Exposure Levels:  
Amount Smoked, Tar Levels and Percent Menthol  
Among Current Smokers by Socio Demographic Variables  
1986**

	Cigarettes per day				Tar level, mg/cig				% who use menthol
	15 or less	16-24	25 or more	Total	<=10	>10-15	>15	Total	
Total (17-65+)	35.0	34.9	30.1	100	29.6	11.6	58.8	100	29.2
<b>SEX</b>									
Male	29.8	34.0	36.2	100	26.8	8.0	65.2	100	24.9
Female	40.7	35.9	23.4	100	32.7	15.6	51.7	100	34.0
<b>AGE (1st grouping)</b>									
17-19	53.8	34.1	12.1	100	31.7	2.7	65.6	100	29.3
20-24	41.0	40.0	19.0	100	30.4	4.9	64.8	100	24.1
25-34	39.2	32.8	28.0	100	32.2	5.6	62.1	100	36.9
35-44	28.8	35.3	35.9	100	30.6	12.7	56.7	100	31.3
45-54	26.9	34.6	38.5	100	26.3	19.2	54.5	100	23.0
55-64	29.8	33.8	36.4	100	26.2	16.2	57.5	100	24.4
65+	42.1	36.7	21.3	100	26.3	22.6	51.1	100	21.1
<b>AGE (2nd grouping)</b>									
17	51.7	42.8	5.5	100	38.9	4.0	57.1	100	29.0
18-24	43.8	37.9	18.3	100	29.9	4.3	65.8	100	25.2
25-44	34.5	33.9	31.5	100	31.5	8.8	59.7	100	34.4
45-64	28.3	34.2	37.5	100	26.3	17.8	55.9	100	23.7
65+	42.1	36.7	21.3	100	26.3	22.6	51.1	100	21.1
<b>RACE</b>									
White	31.2	35.7	33.1	100	31.8	12.3	55.9	100	23.1
Black	61.3	27.3	11.4	100	14.5	7.6	78.0	100	75.5
Other	40.5	40.6	18.8	100	26.2	5.3	68.5	100	24.9
<b>REGION</b>									
Midwest	31.7	35.0	33.3	100	25.3	10.4	64.3	100	30.5
Northeast	34.9	35.3	29.8	100	36.8	12.6	50.6	100	27.9
Southeast	35.3	35.9	28.8	100	28.0	12.7	59.3	100	31.2
West	39.1	32.0	28.8	100	31.0	9.6	59.4	100	24.5
<b>MARITAL STATUS</b>									
Married/Cohabiting	32.7	34.6	32.7	100	29.6	12.4	58.0	100	27.3
Widowed	40.3	37.0	22.7	100	30.3	19.1	50.7	100	28.9
Divorced/Separated	30.2	37.2	32.6	100	26.9	13.8	59.3	100	32.3
Never Married	45.3	33.8	20.9	100	31.6	5.0	63.4	100	34.1
Unknown	53.8	22.4	23.8	100	19.5		80.5	100	34.7
<b>EDUCATION</b>									
11 or Fewer Years	33.5	36.5	30.0	100	23.5	11.6	64.8	100	27.6
12 Years	34.4	33.7	31.9	100	29.4	11.9	58.7	100	29.7
13-15 Years	36.4	36.1	27.4	100	36.8	9.7	53.5	100	32.0
16+ Years	39.1	32.8	28.1	100	36.4	13.2	50.4	100	27.1
<b>HOUSEHOLD INCOME</b>									
Less than \$10,000	40.5	33.8	25.7	100	22.1	11.0	66.9	100	36.8
\$10,000-\$19,999	34.8	34.2	31.0	100	27.5	12.9	59.5	100	26.7
\$20,000-\$29,999	34.0	36.5	29.6	100	31.5	11.4	57.1	100	28.3
\$30,000-\$39,999	35.3	34.4	30.3	100	30.7	9.7	59.6	100	29.6
\$40,000+	29.3	34.1	36.6	100	34.6	11.9	53.4	100	27.7
Unknown	39.3	35.2	25.5	100	27.9	11.9	60.2	100	29.6
<b>EMPLOYMENT</b>									
Administrator/Manager	32.3	36.3	31.4	100	31.2	15.1	53.7	100	26.4
Professional/Technical	34.6	34.7	30.7	100	41.6	13.0	45.3	100	29.7
Sales/Clerical	38.2	34.4	27.3	100	32.7	14.4	52.9	100	33.0
Craftsman	27.8	33.6	38.6	100	24.0	10.3	65.7	100	23.5
Operative	32.3	34.0	33.7	100	24.3	9.0	66.7	100	26.0
Laborer/Service	37.0	34.6	28.4	100	28.9	9.3	61.8	100	30.0
Never in Labor Force	43.6	36.7	19.6	100	25.1	10.7	64.3	100	35.7
Occupation Not Reported	40.1	41.4	18.5	100	27.9	10.1	62.0	100	32.9
<b>POVERTY LEVEL*</b>									
Above	33.3	35.2	31.6	100	31.1	11.7	57.2	100	27.7
Below	41.4	32.4	26.2	100	21.9	10.1	68.0	100	38.6
Unknown	39.3	35.2	25.5	100	27.9	11.9	60.2	100	29.6

\* Poverty level is based on the definition provided by the U.S. Bureau of the Census. See text for exact procedures.

Table 8

**Cigarette Exposure Levels:  
Amount Smoked, Tar Levels and Percent Menthol  
Among Former Smokers\* by Socio Demographic Variables  
1986**

	Cigarettes per day				Tar level, mg/cig			Total	% who use menthol
	15 or less	16-24	25 or more	Total	<=10	>10-15	>15		
Total (Age 17+ years)	38.2	29.6	32.2	100	31.5	10.9	57.6	100	30.3
<b>SEX</b>									
Male	31.2	29.6	39.2	100	29.4	10.1	60.5	100	23.6
Female	46.6	29.7	23.7	100	34.0	11.9	54.1	100	38.3
<b>AGE (1st grouping)</b>									
17-19	80.6	7.4	12.0	100	25.3	4.5	70.2	100	34.4
20-24	58.3	25.2	16.5	100	42.1	1.9	56.0	100	31.6
25-34	40.5	32.0	27.5	100	38.2	4.5	57.3	100	34.0
35-44	34.9	29.8	35.4	100	25.0	10.8	64.2	100	35.6
45-54	27.0	27.0	46.0	100	32.9	16.3	50.8	100	26.5
55-64	24.8	31.0	44.2	100	23.7	19.3	57.0	100	21.7
65+	36.3	35.9	27.8	100	26.4	21.1	52.5	100	23.9
<b>AGE (2nd grouping)</b>									
17	96.6	3.4	.	100	7.3	.	92.7	100	35.8
18-24	61.5	22.0	16.5	100	40.1	2.8	57.1	100	32.0
25-44	38.2	31.1	30.8	100	32.8	7.1	60.1	100	34.7
45-64	25.8	29.1	45.1	100	28.0	17.9	54.1	100	23.9
65+	36.3	35.9	27.8	100	26.4	21.1	52.5	100	23.9
<b>RACE</b>									
White	36.1	29.7	34.2	100	33.4	11.3	55.3	100	25.9
Black	57.0	30.9	12.1	100	15.5	7.4	77.2	100	72.4
Other	41.5	23.4	35.1	100	25.2	11.6	63.2	100	28.0
<b>REGION</b>									
Midwest	37.4	32.6	30.0	100	26.6	11.3	62.1	100	39.5
Northeast	34.3	31.3	34.4	100	42.1	11.5	46.4	100	25.5
Southeast	37.4	29.0	33.6	100	28.5	10.3	61.2	100	27.2
West	45.0	25.4	29.6	100	30.3	10.8	58.9	100	30.2
<b>MARITAL STATUS</b>									
Married/Cohabiting	33.8	30.6	35.6	100	31.4	11.8	56.8	100	29.7
Widowed	47.0	28.1	24.9	100	25.6	19.7	54.7	100	28.8
Divorced/Separated	37.4	30.7	31.9	100	21.6	10.6	67.8	100	39.5
Never Married	54.4	24.8	20.7	100	39.0	4.8	56.3	100	28.6
Unknown	.	63.5	36.5	100	12.7	.	87.3	100	23.8
<b>EDUCATION</b>									
11 or Fewer Years	36.0	28.8	35.2	100	20.8	12.4	66.8	100	31.3
12 Years	36.5	29.8	33.7	100	33.4	10.8	55.8	100	29.5
13-15 Years	40.8	27.7	31.5	100	33.5	11.4	55.1	100	29.7
16+ Years	42.1	32.4	25.5	100	39.2	8.7	52.1	100	31.2
<b>HOUSEHOLD INCOME</b>									
Less than \$10,000	45.6	29.6	24.9	100	20.8	12.4	66.9	100	39.5
\$10,000-\$19,999	33.7	33.3	33.0	100	33.0	10.4	56.5	100	27.2
\$20,000-\$29,999	39.9	28.2	32.0	100	31.7	6.1	62.2	100	33.9
\$30,000-\$39,999	34.6	30.7	34.7	100	34.2	10.2	55.6	100	34.6
\$40,000+	39.6	28.1	32.2	100	36.9	12.9	50.2	100	25.8
Unknown	37.3	29.5	33.2	100	23.7	14.8	61.5	100	27.7
<b>EMPLOYMENT</b>									
Administrator/Manager	30.5	33.1	36.4	100	37.3	11.3	51.4	100	28.2
Professional/Technical	43.4	27.5	29.1	100	36.4	9.6	54.0	100	33.6
Sales/Clerical	46.9	29.6	23.4	100	36.4	10.7	52.9	100	33.3
Craftsman	25.8	27.3	46.9	100	25.4	14.3	60.3	100	16.9
Operative	28.6	38.5	32.9	100	24.4	9.6	66.0	100	32.3
Laborer/Service	39.8	28.2	32.0	100	26.3	12.0	61.8	100	33.4
Never in Labor Force	50.3	20.1	29.7	100	22.0	9.3	68.7	100	32.9
Occupation Not Reported	36.7	27.4	35.9	100	30.7	5.8	63.5	100	32.0
<b>POVERTY LEVEL**</b>									
Above	37.7	29.9	32.4	100	34.2	10.0	55.8	100	30.0
Below	45.2	27.0	27.7	100	19.7	12.3	67.9	100	39.0
Unknown	37.3	29.5	33.2	100	23.7	14.8	61.5	100	27.7

\* Former smokers who had quit within the last five years.

\*\* Poverty level is based on the definition provided by the U.S. Bureau of the Census. See text for exact procedures.

Table 9

**Quitting: Total Number of Attempts of Current Smokers  
by Socio Demographic Variables  
1986**

	Attempts to quit smoking (% of current smokers)					Est. pop. (mil.)	Sample size
	0	1-2	3-5	6+	Total		
Total (Age 17+ years)	35.5	37.3	18.9	8.3	100	46.7	4,686
<b>SEX</b>							
Male	36.7	36.9	17.1	9.4	100	24.7	2,341
Female	34.2	37.8	20.9	7.0	100	22.0	2,345
<b>AGE (1st grouping)</b>							
17-19	47.2	31.1	18.6	3.1	100	2.0	168
20-24	42.5	42.3	11.6	3.5	100	5.0	419
25-34	33.8	40.2	19.2	6.8	100	12.9	1,276
35-44	32.2	39.6	20.0	8.2	100	10.6	1,154
45-54	34.1	35.3	21.5	9.2	100	6.6	687
55-64	35.8	32.5	20.0	11.7	100	5.8	575
65+	37.0	28.9	18.8	15.4	100	3.8	407
<b>AGE (2nd grouping)</b>							
17	60.8	20.6	17.2	1.4	100	0.7	49
18-24	42.0	41.2	13.2	3.6	100	6.3	538
25-44	33.1	39.9	19.5	7.5	100	23.5	2,430
45-64	34.9	34.0	20.8	10.4	100	12.4	1,262
65+	37.0	28.9	18.8	15.4	100	3.8	407
<b>RACE</b>							
White	35.6	37.9	18.8	7.7	100	39.8	4,112
Black	34.3	32.9	19.9	12.8	100	5.5	438
Other	37.7	39.0	17.3	5.9	100	1.4	136
<b>REGION</b>							
Midwest	35.3	38.8	17.2	8.7	100	11.6	1,197
Northeast	32.1	37.2	20.9	9.8	100	9.4	1,056
Southeast	37.2	36.7	18.3	7.8	100	17.4	1,582
West	36.1	36.8	20.3	6.7	100	8.2	851
<b>MARITAL STATUS</b>							
Married/Cohabiting	33.6	38.8	19.4	8.2	100	30.5	2,853
Widowed	34.7	29.3	22.7	13.3	100	2.2	294
Divorced/Separated	35.3	38.1	17.2	9.5	100	5.7	730
Never Married	43.4	33.2	17.4	6.1	100	8.2	794
Unknown	12.3	55.6	18.3	13.8	100	0.1	15
<b>EDUCATION</b>							
11 or Fewer Years	37.1	33.5	20.2	9.2	100	14.5	946
12 Years	35.2	38.6	18.8	7.4	100	19.3	1,955
13-15 Years	35.1	39.3	17.7	7.9	100	8.0	1,140
16+ Years	32.5	40.8	17.4	9.4	100	5.0	645
<b>HOUSEHOLD INCOME</b>							
Less than \$10,000	33.6	36.6	20.0	9.8	100	5.2	490
\$10,000-\$19,999	35.3	37.4	19.7	7.6	100	9.0	889
\$20,000-\$29,999	37.1	37.7	16.2	9.0	100	11.8	1,170
\$30,000-\$39,999	29.5	39.1	24.9	6.5	100	6.3	642
\$40,000+	34.4	39.2	17.2	9.2	100	7.9	874
Unknown	41.2	33.4	18.2	7.2	100	6.6	621
<b>EMPLOYMENT</b>							
Administrator/Manager	29.7	42.7	18.7	8.9	100	3.6	459
Professional/Technical	36.0	38.4	16.4	9.3	100	4.7	579
Sales/Clerical	35.7	37.0	20.9	6.4	100	11.1	1,197
Craftsman	35.6	35.4	19.1	9.9	100	7.9	726
Operative	33.1	38.3	19.5	9.2	100	6.1	533
Laborer/Service	37.0	37.0	17.0	8.9	100	8.6	791
Never in Labor Force	42.3	36.1	17.1	4.5	100	2.5	186
Occupation Not Reported	35.6	34.7	21.8	7.8	100	2.1	215
<b>POVERTY LEVEL*</b>							
Above	34.5	38.2	18.9	8.4	100	35.0	3,627
Below	35.0	36.4	19.8	8.9	100	5.1	438
Unknown	41.2	33.4	18.2	7.2	100	6.6	621

\* Poverty level is based on the definition provided by the U.S. Bureau of the Census. See text for exact procedures.

**Table 10**  
**Quitting: Total Number of Attempts of Current Smokers**  
**by Socio Demographic Variables**  
**1975**

	Attempts to quit smoking (% of current smokers)					Sample size
	0	1-2	3-5	6+	Total	
Total (Age 21+ years)	37.6	37.0	18.1	7.3	100	4,262
<b>SEX</b>						
Male	35.4	39.2	17.8	7.7	100	2,139
Female	40.4	34.3	18.4	6.9	100	2,123
<b>AGE (1st grouping)</b>						
21-24	37.8	41.0	16.4	4.8	100	497
25-34	35.3	39.7	18.7	6.4	100	1,249
35-44	34.6	39.5	17.6	8.3	100	976
45-54	39.5	33.7	18.3	8.4	100	788
55-64	40.4	30.8	19.9	8.9	100	504
65+	44.9	33.5	15.8	5.8	100	248
<b>AGE (2nd grouping)</b>						
21-24	37.8	41.0	16.4	4.8	100	497
25-44	35.0	39.6	18.2	7.2	100	2,225
45-64	39.9	32.6	18.9	8.6	100	1,292
65+	44.9	33.5	15.8	5.8	100	248
<b>MARITAL STATUS</b>						
Married	36.0	37.6	18.5	7.9	100	2,951
Widowed	48.7	32.0	14.1	5.3	100	272
Divorced/Separated	39.3	36.8	17.8	6.1	100	572
Never Married	42.3	35.5	17.1	5.1	100	463
Unknown	40.6	43.4		16.0	100	4
<b>EDUCATION</b>						
Some high school	36.4	35.9	19.4	8.3	100	1,130
High school graduate	40.4	36.1	17.2	6.3	100	1,680
Some college	36.9	38.8	15.9	8.3	100	879
College graduate	33.3	39.1	21.3	6.4	100	558
Unknown	32.5	35.7	10.3	21.5	100	15
<b>HOUSEHOLD INCOME</b>						
Less than \$10,000	38.1	35.8	17.9	8.3	100	1,452
\$10,000-\$19,999	36.0	39.1	18.4	6.6	100	1,661
\$20,000+	36.1	37.8	18.9	7.2	100	723
Unknown	45.5	31.2	16.0	7.3	100	426
<b>EMPLOYMENT</b>						
Professional/Technical	34.8	44.2	15.2	5.8	100	210
Administrator/Manager	39.5	37.1	18.7	4.7	100	274
Sales/Clerical	45.1	36.7	12.6	5.6	100	130
Craftsman	37.9	34.6	20.0	7.5	100	303
Operatives	41.0	32.0	20.9	6.2	100	168
Laborer/Service	39.2	32.1	21.7	7.1	100	108
Not in Labor Force	39.2	35.8	15.2	9.8	100	165
Occupation Not Reported	36.9	37.3	18.2	7.6	100	2,904

Table 11

**Quitting: Total Number of Attempts of Former Smokers  
by Socio Demographic Variables  
1986**

	Attempts to quit smoking (% of former smokers)					Est. pop. (mil.)	Sample size
	0	1-2	3-5	6+	Total		
Total (Age 17+ years)	.	70.2	21.2	8.6	100	43.5	4,614
<b>SEX</b>							
Male	.	68.9	21.6	9.5	100	25.6	2,606
Female	.	72.2	20.5	7.2	100	17.9	2,008
<b>AGE (1st grouping)</b>							
17-19	.	88.0	9.4	2.6	100	0.6	42
20-24	.	73.4	21.6	5.0	100	2.0	180
25-34	.	73.4	20.3	6.3	100	8.2	867
35-44	.	68.8	22.4	8.8	100	8.4	983
45-54	.	62.8	25.4	11.8	100	7.1	731
55-64	.	68.4	20.8	10.8	100	8.0	831
65+	.	74.3	18.4	7.3	100	9.1	980
<b>AGE (2nd grouping)</b>							
17	.	100.0	.	.	100	0.2	11
18-24	.	75.1	20.1	4.8	100	2.5	211
25-44	.	71.1	21.3	7.6	100	16.6	1,850
45-64	.	65.8	23.0	11.2	100	15.2	1,562
65+	.	74.3	18.4	7.3	100	9.1	980
<b>RACE</b>							
White	.	70.3	21.1	8.6	100	38.9	4,228
Black	.	68.6	22.8	8.7	100	3.5	282
Other	.	72.4	19.5	8.1	100	1.1	104
<b>REGION</b>							
Midwest	.	71.1	21.5	7.5	100	9.9	1,090
Northeast	.	68.5	23.2	8.3	100	9.9	1,110
Southeast	.	70.6	19.6	9.8	100	14.8	1,478
West	.	70.7	21.2	8.2	100	8.9	936
<b>MARITAL STATUS</b>							
Married/Cohabiting	.	70.0	21.1	8.9	100	32.4	3,265
Widowed	.	72.8	19.7	7.5	100	3.2	424
Divorced/Separated	.	68.3	22.4	9.3	100	3.6	475
Never Married	.	71.5	22.4	6.1	100	4.1	438
Unknown	.	69.9	7.3	22.7	100	0.1	12
<b>EDUCATION</b>							
11 or Fewer Years	.	73.0	19.2	7.9	100	11.5	857
12 Years	.	71.2	20.4	8.4	100	16.0	1,574
13-15 Years	.	68.1	23.4	8.5	100	7.3	1,058
16+ Years	.	66.8	23.2	10.1	100	8.7	1,125
<b>HOUSEHOLD INCOME</b>							
Less than \$10,000	.	70.7	22.2	7.1	100	3.7	374
\$10,000-\$19,999	.	71.0	22.0	7.0	100	7.2	712
\$20,000-\$29,999	.	72.1	18.4	9.5	100	8.6	922
\$30,000-\$39,999	.	67.3	24.4	8.4	100	5.6	608
\$40,000+	.	68.9	22.6	8.5	100	11.2	1,264
Unknown	.	71.5	18.3	10.3	100	7.2	734
<b>EMPLOYMENT</b>							
Administrator/Manager	.	64.0	25.8	10.1	100	5.3	635
Professional/Technical	.	67.0	23.2	9.9	100	7.2	906
Sales/Clerical	.	73.2	19.7	7.1	100	10.1	1,094
Craftsman	.	70.4	21.1	8.5	100	7.4	690
Operative	.	67.8	21.4	10.8	100	4.5	437
Laborer/Service	.	74.7	19.2	6.2	100	6.0	540
Never in Labor Force	.	76.3	17.2	6.5	100	1.1	109
Occupation Not Reported	.	72.2	16.7	11.1	100	1.8	203
<b>POVERTY LEVEL*</b>							
Above	.	70.0	21.7	8.3	100	33.0	3,593
Below	.	69.6	22.1	8.3	100	3.3	287
Unknown	.	71.5	18.3	10.3	100	7.2	734

Poverty level is based on the definition provided by the U.S. Bureau of the Census. See text for exact procedures.

**Table 12**  
**Quitting: Total Number of Attempts of Former Smokers**  
**by Socio Demographic Variables**  
**1975**

	Attempts to quit smoking (% of former smokers)				Total	Sample size
	0	1-2	3-5	6+		
Total (Age 21+ years)	.	59.0	24.8	16.2	100	2,687
<b>SEX</b>						
Male	.	56.9	25.5	17.6	100	1,632
Female	.	62.9	23.7	13.5	100	1,055
<b>AGE (1st grouping)</b>						
21-24	.	55.8	32.0	12.2	100	185
25-34	.	63.7	24.4	11.8	100	651
35-44	.	60.2	23.5	16.3	100	495
45-54	.	53.1	29.0	18.0	100	567
55-64	.	56.3	23.3	20.4	100	446
65+	.	64.1	19.9	16.0	100	343
<b>AGE (2nd grouping)</b>						
21-24	.	55.8	32.0	12.2	100	185
25-44	.	62.1	24.0	13.9	100	1,146
45-64	.	54.6	26.4	19.1	100	1,013
65+	.	64.1	19.9	16.0	100	343
<b>MARITAL STATUS</b>						
Married	.	58.0	25.0	17.0	100	2,112
Widowed	.	66.4	21.0	12.6	100	171
Divorced/Separated	.	58.4	26.0	15.6	100	181
Never Married	.	64.9	25.1	10.0	100	217
Unknown	.	79.1	20.9	.	100	6
<b>EDUCATION</b>						
Some high school	.	57.2	24.8	18.0	100	645
High school graduate	.	57.8	23.7	18.6	100	872
Some college	.	62.7	25.2	12.1	100	579
College graduate	.	58.6	26.8	14.7	100	572
Unknown	.	63.1	12.5	4.4	100	19
<b>HOUSEHOLD INCOME</b>						
Less than \$10,000	.	57.7	24.4	17.9	100	736
\$10,000-\$19,999	.	58.3	26.2	15.5	100	1,103
\$20,000+	.	59.7	23.5	16.8	100	578
Unknown	.	63.5	23.4	13.1	100	270
<b>EMPLOYMENT</b>						
Professional/Technical	.	66.6	20.4	13.0	100	159
Administrator/Manager	.	70.6	17.8	11.6	100	150
Sales/Clerical	.	48.6	36.7	14.7	100	79
Craftsman	.	59.2	28.0	12.8	100	122
Operatives	.	64.0	20.7	15.2	100	67
Laborer/Service	.	54.6	32.3	13.2	100	47
Not in Labor Force	.	60.0	22.3	17.7	100	84
Occupation Not Reported	.	57.8	25.1	17.1	100	1,979

**Table 13**  
**Age of Initiation of Smoking:**  
**Current Smokers by Socio Demographic Variables**  
**1986**

	<u>Age when started smoking regularly</u> (% of current smokers)				Est. pop. (mil.)	Sample size
	<16	16-17	18-20	21+		
Total (Age 17+ years)	20.8	25.9	31.6	21.7	45.8	4,615
<b>SEX</b>						
Male	23.5	28.2	32.2	16.2	24.3	2,312
Female	17.7	23.3	31.0	28.0	21.5	2,303
<b>AGE (1st grouping)</b>						
17-19	43.4	43.0	13.6	.	2.0	166
20-24	28.2	36.9	31.6	3.2	5.0	416
25-34	23.5	29.2	31.5	15.8	12.7	1,259
35-44	16.3	24.6	33.6	25.5	10.4	1,141
45-54	16.2	17.4	39.3	27.1	6.5	680
55-64	15.8	21.5	31.0	31.7	5.7	563
65+	17.1	15.2	23.5	44.3	3.6	390
<b>AGE (2nd grouping)</b>						
17	54.8	45.2	.	.	0.7	47
18-24	30.2	38.0	29.3	2.5	6.3	535
25-44	20.3	27.1	32.4	20.2	23.1	2,400
45-64	16.0	19.3	35.4	29.2	12.2	1,243
65+	17.1	15.2	23.5	44.3	3.6	390
<b>RACE</b>						
White	21.9	27.2	30.8	20.2	39.0	4,052
Black	11.5	19.5	37.2	31.8	5.4	431
Other	25.6	14.4	33.9	26.1	1.4	132
<b>REGION</b>						
Midwest	21.5	25.0	31.7	21.8	11.5	1,182
Northeast	20.1	26.2	34.3	19.4	9.3	1,037
Southeast	20.0	25.5	31.9	22.7	16.9	1,549
West	22.1	27.6	28.0	22.3	8.2	847
<b>MARITAL STATUS</b>						
Married/Cohabiting	19.4	25.0	33.3	22.3	29.9	2,807
Widowed	13.0	16.2	25.8	45.1	2.2	289
Divorced/Separated	21.7	24.8	27.5	26.0	5.6	720
Never Married	26.9	32.3	30.2	10.6	8.1	784
Unknown	41.9	30.4	16.6	11.1	0.1	15
<b>EDUCATION</b>						
11 or Fewer Years	30.0	29.3	24.0	16.7	14.1	927
12 Years	18.4	27.1	32.5	22.0	19.1	1,935
13-15 Years	15.0	23.0	37.5	24.5	7.9	1,127
16+ Years	12.5	15.6	41.0	30.9	4.8	626
<b>HOUSEHOLD INCOME</b>						
Less than \$10,000	21.8	27.6	25.1	25.6	5.1	486
\$10,000-\$19,999	24.6	23.1	32.8	19.4	8.9	881
\$20,000-\$29,999	19.7	26.6	32.6	21.1	11.5	1,153
\$30,000-\$39,999	18.8	27.9	33.6	19.7	6.3	640
\$40,000+	16.6	24.9	35.3	23.2	7.7	858
Unknown	23.5	26.2	27.1	23.3	6.3	597
<b>EMPLOYMENT</b>						
Administrator/Manager	15.9	22.5	34.1	27.5	3.6	456
Professional/Technical	12.8	19.8	40.0	27.5	4.6	563
Sales/Clerical	18.0	24.0	33.5	24.5	10.9	1,176
Craftsman	27.2	27.8	28.9	16.1	7.8	718
Operative	21.5	30.9	28.9	18.7	6.1	529
Laborer/Service	19.8	26.8	30.4	23.0	8.5	781
Never in Labor Force	31.3	30.2	25.4	13.2	2.5	186
Occupation Not Reported	26.6	24.3	29.6	19.6	2.0	206
<b>POVERTY LEVEL*</b>						
Above	20.0	25.5	33.2	21.3	34.4	3,585
Below	22.5	27.9	26.6	23.0	5.1	433
Unknown	23.5	26.2	27.1	23.3	6.3	597

\* Poverty level is based on the definition provided by the U.S. Bureau of the Census. See text for exact procedures.

**Table 14**  
**Age of Initiation of Smoking:**  
**Former Smokers by Socio Demographic Variables**  
**1986**

	Age when started smoking regularly (% of former smokers)				Est. pop. (mil.)	Sample size
	<16	16-17	18-20	21+		
Total (Age 17+ years)	17.2	24.1	34.8	23.8	40.9	4,352
<b>SEX</b>						
Male	20.5	25.5	35.2	18.8	24.3	2,487
Female	12.5	22.1	34.2	31.2	16.6	1,865
<b>AGE (1st grouping)</b>						
17-19	44.6	51.2	4.2	.	0.5	38
20-24	27.1	41.2	30.2	1.4	2.0	173
25-34	23.2	30.3	34.0	12.4	7.7	818
35-44	18.0	25.9	36.6	19.6	8.0	934
45-54	15.1	24.5	36.1	24.4	6.8	695
55-64	14.9	19.5	37.9	27.7	7.7	793
65+	11.0	15.0	32.7	41.2	8.3	901
<b>AGE (2nd grouping)</b>						
17	35.0	65.0	.	.	0.1	10
18-24	30.3	41.9	26.6	1.2	2.3	201
25-44	20.5	28.0	35.3	16.1	15.7	1,752
45-64	15.0	21.8	37.1	26.1	14.5	1,488
65+	11.0	15.0	32.7	41.2	8.3	901
<b>RACE</b>						
White	17.9	24.1	34.9	23.1	36.7	3,993
Black	10.5	24.4	33.8	31.3	3.2	260
Other	16.7	22.9	33.3	27.1	1.0	99
<b>REGION</b>						
Midwest	14.7	26.0	34.1	25.2	9.3	1,028
Northeast	16.3	25.1	37.6	21.1	9.2	1,043
Southeast	18.1	23.7	33.4	24.8	13.9	1,387
West	19.7	21.6	34.9	23.8	8.4	894
<b>MARITAL STATUS</b>						
Married/Cohabiting	17.1	24.6	36.1	22.2	30.9	3,117
Widowed	7.9	14.9	27.9	49.3	2.8	378
Divorced/Separated	20.2	21.2	31.9	26.8	3.4	445
Never Married	22.8	29.7	31.9	15.6	3.7	400
Unknown	13.6	35.0	31.1	20.4	0.1	12
<b>EDUCATION</b>						
11 or Fewer Years	21.1	25.9	26.2	26.7	10.6	796
12 Years	18.4	24.7	34.0	23.0	15.4	1,507
13-15 Years	16.1	24.3	38.5	21.1	6.7	994
16+ Years	11.1	20.6	44.3	24.0	8.2	1,055
<b>HOUSEHOLD INCOME</b>						
Less than \$10,000	15.7	18.5	26.8	39.0	3.3	342
\$10,000-\$19,999	20.5	22.2	29.4	27.9	6.7	674
\$20,000-\$29,999	19.1	27.9	31.7	21.3	8.3	879
\$30,000-\$39,999	17.3	27.2	36.7	18.9	5.3	577
\$40,000+	14.9	24.4	40.8	19.9	10.7	1,198
Unknown	16.2	21.3	37.0	25.4	6.6	682
<b>EMPLOYMENT</b>						
Administrator/Manager	12.9	24.8	37.2	25.1	5.0	596
Professional/Technical	13.1	19.8	39.0	28.1	6.9	855
Sales/Clerical	13.7	22.8	36.8	26.8	9.4	1,027
Craftsman	20.7	26.2	34.7	18.4	7.1	666
Operative	25.8	23.1	32.6	18.5	4.3	410
Laborer/Service	19.4	24.5	28.4	27.8	5.5	508
Never in Labor Force	23.4	37.7	28.7	10.1	1.1	103
Occupation Not Reported	19.9	31.0	30.3	18.8	1.7	187
<b>POVERTY LEVEL*</b>						
Above	17.6	24.9	35.1	22.4	31.3	3,405
Below	15.3	22.0	27.1	35.5	3.0	265
Unknown	16.2	21.3	37.0	25.4	6.6	682

\* Poverty level is based on the definition provided by the U.S. Bureau of the Census. See text for exact procedures.

**Table 15**  
**Age of Initiation of Smoking:**  
**Current Smokers by Socio Demographic Variables**  
**1975**

	Age when started smoking regularly (% of current smokers)				Sample size
	<16	16-17	18-20	21+	
Total (Age 21+ years)	21.9	20.8	32.7	24.6	4,339
<b>SEX</b>					
Male	28.8	22.6	31.9	16.6	2,176
Female	13.6	18.5	33.8	34.1	2,163
<b>AGE (1st grouping)</b>					
21-24	27.0	28.7	36.8	7.4	499
25-34	25.3	23.1	36.0	15.7	1,262
35-44	18.9	20.3	35.0	25.9	990
45-54	18.1	19.8	31.2	30.9	805
55-64	20.3	17.4	29.0	33.4	517
65+	24.1	10.7	19.7	45.5	266
<b>AGE (2nd grouping)</b>					
21-24	27.0	28.7	36.8	7.4	499
25-44	22.4	21.8	35.5	20.3	2,252
45-64	19.0	18.8	30.3	31.9	1,322
65+	24.1	10.7	19.7	45.5	266
<b>MARITAL STATUS</b>					
Married	22.2	20.6	33.5	23.8	2,997
Widowed	13.0	13.7	26.2	47.1	287
Divorced/Separated	24.4	21.9	28.1	25.6	580
Never Married	21.6	24.9	35.6	17.9	470
Unknown	76.2	7.9	15.9	.	5
<b>EDUCATION</b>					
Some high school	33.1	20.9	24.7	21.3	1,155
High school graduate	20.0	21.6	33.6	24.9	1,704
Some college	15.8	20.9	39.0	24.3	887
College graduate	13.7	18.0	37.5	30.8	571
Unknown	25.6	16.5	32.0	25.9	22
<b>HOUSEHOLD INCOME</b>					
Less than \$10,000	24.6	19.7	29.5	26.1	1,479
\$10,000-\$19,999	22.0	21.7	34.7	21.7	1,680
\$20,000+	16.2	22.5	35.9	25.4	734
Unknown	23.4	17.8	29.8	29.0	446
<b>EMPLOYMENT</b>					
Professional/Technical	9.9	18.8	35.9	35.4	211
Administrator/Manager	12.5	18.9	35.5	33.1	278
Sales/Clerical	18.8	20.8	33.5	26.8	131
Craftsman	15.0	24.5	35.9	24.6	304
Operatives	23.6	15.3	34.5	26.5	170
Laborer/Service	16.7	27.1	32.7	23.5	110
Not in Labor Force	11.7	16.8	32.0	39.5	167
Occupation Not Reported	25.5	21.1	31.8	21.7	2,968

**Table 16**  
**Age of Initiation of Smoking:**  
**Former Smokers by Socio Demographic Variables**  
**1975**

	<u>Age when started smoking regularly</u> <u>(% of former smokers)</u>				Sample size
	<16	16-17	18-20	21+	
Total (Age 21+ years)	21.3	21.5	34.4	22.8	2,686
<b>SEX</b>					
Male	25.8	22.6	33.2	18.3	1,632
Female	13.0	19.5	36.5	31.0	1,054
<b>AGE (1st grouping)</b>					
21-24	26.5	31.2	37.0	5.3	185
25-34	23.2	25.6	40.5	10.7	651
35-44	24.7	22.2	33.0	20.0	495
45-54	17.1	23.9	36.3	22.7	567
55-64	21.5	15.3	30.0	33.2	445
65+	18.2	15.4	29.3	37.0	343
<b>AGE (2nd grouping)</b>					
21-24	26.5	31.2	37.0	5.3	185
25-44	23.9	24.1	37.1	15.0	1,146
45-64	19.1	19.9	33.4	27.5	1,012
65+	18.2	15.4	29.3	37.0	343
<b>MARITAL STATUS</b>					
Married	21.3	22.0	35.0	21.6	2,112
Widowed	15.2	14.0	26.5	44.2	171
Divorced/Separated	21.7	22.9	29.6	25.8	180
Never Married	24.8	20.5	36.4	18.2	217
Unknown	43.6	13.2	17.8	25.3	6
<b>EDUCATION</b>					
Some high school	27.8	21.6	26.6	24.0	644
High school graduate	24.3	21.0	33.9	20.8	872
Some college	18.8	24.6	36.7	19.9	579
College graduate	10.8	19.5	42.7	27.0	572
Unknown	35.1	13.1	23.0	28.9	19
<b>HOUSEHOLD INCOME</b>					
Less than \$10,000	23.5	20.1	30.3	26.1	735
\$10,000-\$19,999	21.9	22.7	36.0	19.4	1,103
\$20,000+	16.5	21.5	38.3	23.7	578
Unknown	23.8	20.7	29.9	25.5	270
<b>EMPLOYMENT</b>					
Professional/Technical	12.6	22.9	45.8	18.8	159
Administrator/Manager	14.4	21.5	38.7	25.4	150
Sales/Clerical	9.5	18.6	53.3	18.6	79
Craftsman	16.5	25.3	30.4	27.9	122
Operatives	32.5	24.4	23.6	19.6	67
Laborer/Service	13.5	25.1	43.1	18.3	47
Not in Labor Force	5.2	13.9	29.7	51.2	84
Occupation Not Reported	23.9	21.5	33.1	21.5	1,978

# SMOKING-ATTRIBUTABLE MORTALITY, YEARS OF POTENTIAL LIFE LOST, AND ECONOMIC COSTS STATE-SPECIFIC ESTIMATES, 1985

## INTRODUCTION

Cigarette smoking has been identified as the chief avoidable cause of death in the United States (USDHHS, 1982). Measurements of the impact of smoking, using calculations of smoking-attributable mortality and economic costs, have recently appeared in several medical journal articles (Rice et al., 1986; Ravenholt, 1985; CDC, 1987b) as well as in an Office of Technology Assessment Staff Memorandum (OTA, 1985). These estimates of disease impact vary according to methods and data sources used in the calculations. Nonetheless, reported numbers of smoking-attributable deaths are enormous, ranging from a low of 270,000 in 1980 (Rice et al., 1986) to a high of 485,000 in 1983 (Ravenholt, 1985). In 1987, the Office on Smoking and Health (OSH) of the Centers for Disease Control (CDC) estimated that 320,515 deaths were attributable to smoking in the United States in 1984 (CDC, 1987b). This was approximately 15.7 percent of the total number of deaths in the United States in that year. Subsequently, the 1989 report of the Surgeon General estimated that 390,000 deaths were caused yearly by smoking. This estimate was based on updated relative risks from the American Cancer Society's Cancer Prevention Study II (USDHHS, 1989). In addition to mortality, years of potential life lost (YPLL) are used to measure disease impact. Rice estimated 3.9 million YPLL were lost due to smoking in 1980. The CDC estimate was 949,924 years lost before age 65 and 3.6 million if YPLL were calculated to life expectancy.

To better understand the economic impact of smoking, smoking-attributable direct and indirect costs have been calculated. Economic calculations of smoking-attributable disease impact range from \$53.7 billion in 1984 (Rice et al., 1986) to \$65 billion in 1985 (OTA, 1985). Economic costs generated by diseases associated with smoking include direct health-care costs (hospitalization, physician fees, medications, nursing home costs, and other professional fees), indirect morbidity losses (lost income due to disability, transportation costs, homecare services, etc.), and indirect mortality losses (lost productivity from persons who die prematurely from smoking-attributable diseases).

This report will present State-specific calculations for smoking-attributable mortality, years of potential life lost, and economic costs in the United States. These calculations were performed using a software program (SAMMEC) developed by the Minnesota Department of Health (MDH) and provided to States through the CDC (Shultz, 1986).

## BACKGROUND

In 1984, the MDH's Technical Advisory Committee on Non-smoking and Health produced The Minnesota Plan for Non-smoking and Health (MDH, 1984). The background research for this document included calculations of smoking-attributable disease impact specific for Minnesota. Analysts at the MDH designed a computer program using well-known software (Lotus 1-2-3) (Lotus, 1984), which produced the calculations, tables, and graphs used in the Plan as well as in numerous presentations to the public and to the State legislature. The calculations were subsequently incorporated into a menu-driven software package, SAMMEC: Smoking-Attributable Mortality, Morbidity, and Economic Costs (Shultz, 1988), which facilitates similar analyses for any given population if the appropriate raw data are available. In Minnesota, smoking-attributable disease impact estimates effectively portrayed the magnitude of the smoking and health issue to the public and were used in support of nonsmoking legislation in Minnesota. These data and a strong coalition of public health, medical, educational, and other disciplines succeeded in bringing about important nonsmoking legislation. This legislation funds statewide smoking intervention curricula, promotes nonsmoking through a public education campaign, establishes a grants program for community-based programs, expands enforcement of the Minnesota Clean Indoor Air Act, provides evaluation of all programs, and raises the State excise tax on cigarettes (Shultz et al., 1986).

## METHODS FOR CALCULATING SMOKING-ATTRIBUTABLE DISEASE IMPACT

### Smoking-Attributable Mortality and Years of Potential Life Lost

The theoretical bases for the calculations used in SAMMEC are found in a 1986 paper by Rice (Rice et al., 1986). The method used by Rice involves calculating smoking-attributable fractions (SAFs) of total mortality due to 21 diseases known to be caused by or associated with smoking in adults. This calculation has three components: the relative risks (RR) (defined as the mortality rate among exposed persons divided by the mortality rate among unexposed persons) of smoking-related disease in current and former smokers, the prevalence of smoking among men and women 20 years of age and older, and the crude mortality data for the population under study. For these calculations, the RR estimates used are weighted averages derived from four longitudinal studies of smoking-related illness (Hammond, 1966; Doll and Peto, 1976;